



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,689	10/29/2003	Ruediger Maestle	860-011555-US/20021086	5065
2512	7590	09/06/2005	EXAMINER	
PERMAN & GREEN 425 POST ROAD FAIRFIELD, CT 06824			DETSCHEL, MARISSA	
			ART UNIT	PAPER NUMBER
			2877	
DATE MAILED: 09/06/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/695,689

Applicant(s)

MAESTLE, RUEDIGER

Examiner

Marissa J. Detschel

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on October 29, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10, 12, 14, 15, and 19 is/are allowed.
- 6) ☒ Claim(s) 1-8, 13, 17, 18, 20 and 21 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 9, 11, and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08252005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. EPO 02025426.4, filed on November 15, 2002.

Information Disclosure Statement

The information disclosure statement filed on March 26, 2004 has been fully considered by the examiner.

Specification

The disclosure is objected to because of the following informalities: In paragraph 2, applicant discloses a prior art reference entitled "Phase and Group Delay Relation in Swept Homodyne Interferometry" by Thomas Jensen and another one for European patent application -1202038 as incorporated in the information disclosure statement provided. Applicant claims both these references as by the same applicant. The applicants for EP-1202038 are under the names of Patrick Zeigler and Ralf Stolte. Therefore, these two references are not by same applicants. Furthermore, the source of the Jensen reference is not disclosed. A copy of the Jensen reference is requested.

The variable t in Equations 4-8 should be written as t_0 since these equations are based on the output of DUT 14 as shown in Figure 3. This output occurs at t_0 .

Paragraph 56 in the specification ends with a comma. This comma should be a period.

Appropriate correction is required.

Claim Objections

Claim 4 is objected to because of the following informalities: The limitation "the incident optical signal" is recited in line 2 of this claim, and there is insufficient antecedent basis for this. Claim 2 recites "an incident optical signal." Examiner suggests making claim 4 dependent on the apparatus of claim 2.

Claim 6 is objected to because of the following informalities: The word "units" in "said first determination units" does not agree with claim 1, which claims only one first determination unit. Examiner suggests changing the word "units" to "unit."

Claim 9 is objected to because of the following informalities: The limitation "said incident optical signal" is recited in line 1 of this claim, and there is insufficient antecedent basis for this. Claim 2 recites "an incident optical signal." Examiner suggests making claim 9 dependent on the apparatus of claim 2.

Claim 11 is objected to because of the following informalities: The limitation "said light paths" is recited in line 1 of this claim, and there is insufficient antecedent basis for this. Claim 4 recites a delay unit comprised of "at least two different light paths." Examiner suggests making claim 11 dependent on apparatus of claim 4.

Claim 16 is objected to because of the following informalities: The limitation "said first beam splitting unit" is recited in line 2 of this claim, and there is insufficient antecedent basis for this. Claim 4 recites "a beam splitting unit." Examiner suggests making claim 16 dependent on the apparatus of claim 4.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites "a light source, preferably a tunable light source, for providing the incident optical signal." It is uncertain so to whether the applicant is claiming a light source or a tunable light source or both.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 13, 17, 18, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosenfeldt, et al. (USPN 6606158 B2).

In regards to claims 1 and 18, Rosenfeldt discloses an apparatus for determining and optical property of a device under test (DUT) comprising a delay unit (102) that provides a composite signal comprising superimposed signals (18a, 18b) that are delayed (108) with respect to each other. The polarizing beam splitter (106) of Rosenfeldt's delay unit allows both 18a and 18b to be present in outgoing ports 112 and 114 in Figure 4 (column 10, lines 8-11). This composite signal is then sent through a DUT (2) via outgoing port 112 and the response signal of the DUT to the composite

signal is sent to a first determination unit (38, 40) in the form of an interference signal due to interference patterns. This interference signal is then use to determine the Jones matrix of the DUT (column 8, lines 53-57). The Jones matrix allows one to determine various optical properties of the DUT, such as reflectivity and transmissivity or insertion loss (column 2, line 64 to column 3, line 2).

In regards to claim 2, the delay unit (102) of Rosenfeldt's device is adapted to derive the superimposed signals (18a, 18b) from an incident optical signal (18).

In regards to claim 3, the light source of Rosenfeldt's device is a tunable light source (column 5, lines 33-35).

In regards to claim 4, the delay unit of Rosenfeldt's device includes a beam splitting unit (104) to split an incident optical signal (18) into two optical path signals (18a, 18b). A delay (108) is introduced in one of the path lengths (18b) to introduce a delay between the two optical path signals. A beam-combining unit (106) forms a composite signal of the two delayed signals by superimposing them.

In regards to claim 5, the DUT response signal of Rosenfeldt's device is due to the composite signal being transferred through the DUT (column 10, lines 10-15).

In regards to claim 6, Rosenfeldt's device uses a second determination unit of detectors (132 and 134) detects the optical signal reflected by the DUT (column 10, lines 40-42). The first determination unit of detectors (38 and 40) detects the optical signal transmitted through the DUT (column 10, lines 50-54).

In regards to claim 7, an optical property of the DUT is determined by analyzing an interference pattern of the DUT response signal (column 10, lines 21-23).

Regarding claim 8, the apparatus of Rosenfeldt can detect a variety of optical properties of the DUT, including insertion loss, polarization dependent loss, and principal states of polarization (column 2 line 64 to column 3, line 2).

Regarding claim 11, Rosenfeldt discloses placing the polarization controller (26) of his device upstream from the beam splitter (14). The paths of the delayed signals are located upstream from the beam splitter. (column 10, lines 27-30)

Regarding claim 13, Rosenfeldt's device includes a reference determination unit (140) that performs a reference measurement of the composite signal (18a, 18b) (column 10, lines 54-61).

In regards to claim 17, Rosenfeldt discloses the use of polarization diversity detectors (38 and 40) to create interference patterns for both polarizations (18a and 18b) (column 10, lines 21-23).

In regards to claim 20, the frequency of the incoming light beam of Rosenfeldt's device is tuned over a given frequency range (Abstract, lines 15-17).

Regarding claim 21, two measurement runs are made at two different polarizations of device of Rosenfeldt. A first run is made using a first polarization in the incident light on the DUT that is set by a polarization setting tool. During the second run, the direction of polarization of the light beam incident on the DUT is changed. (column 3, lines 20-30)

Allowable Subject Matter

Claims 10, 12, 14, 15, and 19 are allowed.

Claims 9 and 16 are objected to due to minor informalities based on insufficient antecedent basis issues, but would be allowable if rewritten to overcome these objections.

The following is a statement of reasons for allowable subject matter.

As to claim 9, the prior art of record, taken alone or in combination, fails to disclose or render obvious an incident optical signal being swept in frequency with a predetermined sweep speed over a frequency tuning range, in combination with the rest of the limitations of claim 9.

As to claim 10, the prior art of record, taken alone or in combination, fails to disclose or render obvious varying the sweep speed for sweeping the incident optical signal in frequency to create a frequency separation between delayed signals, in combination with the rest of the limitations of claim 10.

As to claim 12, the prior art of record, taken alone or in combination, fails to disclose or render obvious detecting first and second interference patterns for first and second frequency separations between delayed signals, in combination with the rest of the limitations of claim 12.

As to claim 14, the prior art of record, taken alone or in combination, fails to disclose or render obvious determining a frequency separation between delayed signals by analyzing a reference interference pattern of a composite signal of the delayed signals, in combination with the rest of the limitations of claim 14.

As to claim 15, the prior art of record, taken alone or in combination, fails to disclose or render obvious the use of an optical modulator to modulate a composite

signal of the delayed signals or the DUT response to that signal with an external frequency, in combination with the rest of the limitations of claim 15.

As to claim 16, the prior art of record, taken alone or in combination, fails to disclose or render obvious the splitting of a tunable light source into at least three optical signals with a polarization controller disposed in the first optical signal and in the third optical signal, in combination with the rest of the limitations of claim 16.

As to claim 19, the prior art of record, taken alone or in combination, fails to disclose or render obvious individually delaying two optical signals in two different light paths to obtain delayed signals, in combination with the rest of the limitations of claim 19.

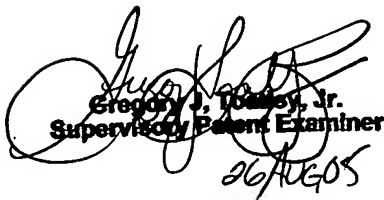
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa J. Detschel whose telephone number is 571-272-2716. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJD
August 25, 2005


Gregory J. Dabney, Jr.
Supervisory Patent Examiner
26 AUG 05